IN THE CLAIMS:

Claims 7 – 45 have been cancelled. Claim 6 has been amended. Claims 46 – 70 have been added.

1. (original) A method of transmitting pulse information to a plurality of thermal elements, comprising:

receiving a plurality of energy index values, the plurality of energy index values representing energy needed to create a specified optical density on a media by the plurality of thermal elements corresponding to the plurality of energy index values;

comparing the plurality of energy index values to an activating energy level of a first pulse position in a pulse stream;

generating an active pulse for a duration of a pulse time for each of the plurality of energy index values that is greater than or equal to the activating energy level of the pulse position in the pulse stream; and

generating an inactive pulse for a duration of a pulse time for each of the plurality of energy index values that is less than the activating energy level of the pulse position in the pulse stream.

2. (original) The method of claim 1, further including actions of

(a) comparing the plurality of energy index values to an activating energy level of a second pulse position in the pulse stream;

(b) generating the active pulse for a duration of the pulse time for each of the plurality of energy index values that is greater than or equal to the activating energy level of the second pulse position in the pulse stream;

(c) generating the inactive pulse for the duration of a pulse time for each of the

plurality of energy index values that is less than the activating energy level of the pulse position in the pulse stream;

and repeating actions (a), (b), and (c) for each pulse position in the pulse stream.

3. (original) The method of claim 1, further including creating a pulse activation table which includes pulse activation energies for each pulse position in the pulse stream before receiving the plurality of energy index values.

4. (original) The method of claim 3, wherein the pulse activation table is preconfigured on a multi-media printer.

5. (original) The method of claim 3, wherein the pulse activation table is created at the initialization of the multi-media printer.

6. (currently amended) The method of claim 3, wherein the pulse activation table is created prior to printing or between prints on the multi-media printer.

Claim 7 – 45 (cancelled).

46. (original) A method of transmitting pulse information to a plurality of thermal elements, comprising:

receiving a plurality of energy index values, the plurality of energy index values representing energy needed to create a specified optical density on a media by the plurality of thermal elements corresponding to the plurality of energy index values;

comparing the plurality of energy index values to an activating energy level of a first pulse position in a pulse stream;

generating an active pulse for a duration of a pulse time for each of the plurality of energy index values that is greater than the activating energy level of the pulse position in the pulse stream; and

generating an inactive pulse for a duration of a pulse time for each of the plurality of energy index values that is less than or equal to the activating energy level of the pulse position in the pulse stream.

47. (new) The method of claim 1, wherein a frame buffer includes a plurality of active subregisters, each of the plurality of active subregisters storing an energy index value of the plurality of energy index values; and

comparison logic performs the comparing of the energy index value in each of the plurality of active subregisters to the activating energy level for the first pulse position in a pulse activation table, and transmits an activation signal based on the generated active pulse or the generated inactive pulse for each of the plurality of energy index values.

48. (new) The method of claim 47, wherein a plurality of driver circuits receive the activation signal for each of the plurality of energy index values and activates the thermal element corresponding to each of the energy index values based on the activation signal.

49. (new) The method of claim 47, further including the comparison logic providing pulse stream offsets based on a predetermined pattern.

50. (new) The method of claim 47, further including the comparison logic extracting pulse stream offset information from the activating energy level in the pulse activation table.

51. (new) The method of claim 47, further including the comparison logic extracting offset information for the pulse position from the pixel energy index values.

52. (new) The method of claim 47, further including the comparison logic

determining pulse stream offset information based on a thermal element location in the printhead.

53. (new) The method of claim 47, wherein the comparison logic is preprogrammed to provide bias pulses of variable durations.

54. (new) The method of claim 47, further including the comparison logic extracting information from the energy index value and using a predetermined algorithm to determine if bias pulses of variable duration are activated.

55. (new) The method of claim 47, further including the comparison logic extracting information from the activating energy level for the pulse position in the pulse stream and the energy index value to determine if bias pulses of variable durations are activated.

56. (new) The method of claim 47, further including the comparison logic extracting information from a number of bits of the energy index value and the activating energy level for the pulse position in the pulse stream to determine if bias pulses that are multiples of the pulse time are activated.

57. (new) The method of claim 47, further including the comparison logic extracting information from a number of bits of the energy index value and the activating energy level for the pulse position in the pulse stream to determine if bias pulses that are fractions of the pulse time are activated.

58. (new) The method of claim 47, further including the comparison logic extracting information from the activating energy level for the pulse position in the pulse stream stored in the pulse activation table to determine if bias pulses of variable duration are activated.

59. (new) The method of claim 47, wherein the plurality of thermal elements create an image on the media.

60. (new) The method of claim 59, wherein the plurality of thermal elements have a u-shape to produce raster-free rendering of the image.

61. (new) The method of claim 59, wherein the plurality of thermal elements have a wide heating profile to produce raster-free rendering of the image.

62. (new) The method of claim 59, further including a color registration module to register the media on which the image is to be printed.

63. (new) The method of claim 59, further including a thermal management module to provide at least one of the following: 1) real-time voltage control of the plurality of thermal elements; 2) to provide compensation for a printhead bow artifact; 3) to determine initial thermal conditions of the plurality of thermal elements prior to rendering; 4) to predict a rate of heat flow out of the plurality of thermal elements; and 5) to apply a corrected amount of energy to maintain desired density levels in the image.

64. (new) The method of claim 1, further including a color mapping module to map a display device color representation scheme to a print device color representation scheme.

65. (new) The method of claim 1, further including a sensor to allow full-bleed printing of the image.

66. (new) A method of reducing data size communicated to a printhead, the method comprising:

transmitting a plurality of energy index values to the printhead;

transmitting a pulse activation table to the printhead;

receiving, at pulse generation hardware on the printhead, the plurality of energy index values and the pulse activation table; and

generating an activation signal for each of a plurality of thermal elements utilizing the active pulse and inactive pulse information based on a comparison of the plurality of energy index values to the pulse activation table.

67. (new) A method of reducing data size communicated to a printhead, the method comprising:

transmitting compressed data representing a plurality of energy index values to the printhead;

receiving, at pulse generation hardware on the printhead, the compressed data representing the plurality of energy index values;

translating the plurality of energy index values into active pulse information and inactive pulse information based on a predetermined algorithm; and

generating an activation signal for each of a plurality of thermal elements utilizing the active pulse information and inactive pulse information.

68. (new) A method of transmitting pulse information to a plurality of thermal elements, comprising:

receiving, at an engine controller that controls a print engine a row of energy index values;

transmitting, from the engine controller, the row of energy index values;

receiving, at a printhead controller, the row of energy index values;

storing, in a frame buffer, the row of energy index values, each of the energy index values being stored in an active subregister;

comparing, by comparison logic, the energy index values in each of the active subregisters to an activating energy level for a first bit position in a pulse activation table, the pulse activation table including a plurality of entries where each of the plurality of entries corresponds to a bit position in a pulse stream;

generating an active pulse for a duration of a pulse time for each of the row of energy index values that is greater than or equal to the activating energy level of the first pulse position in the pulse stream;

generating an inactive pulse for a duration of a pulse time for each of the row of energy index values that is less than the activating energy level of the first pulse position in the pulse stream; and

transmitting an activation signal to the plurality of thermal elements, the activation signal based on the generated active pulse or the generated inactive pulse for each of the row of energy index values.

69. (new) A method of transmitting pulse information to a plurality of thermal elements, comprising:

receiving, at an engine controller that controls a print engine, a row of energy index values;

storing, in a frame buffer, the row of energy index values, each of the energy index values being stored in an active subregister;

comparing, by comparison logic in the engine controller, the energy index values in each of the active subregisters to an activating energy level for a first bit position in a pulse activation table, the pulse activation table including a plurality of entries where each of the plurality of entries corresponds to a bit position in a pulse stream;

generating an active pulse for a duration of a pulse time for each of the row of energy index values that is greater than or equal to the activating energy level of the first pulse position in the pulse stream;

generating an inactive pulse for a duration of a pulse time for each of the row of energy index values that is less than the activating energy level of the first pulse position in the pulse stream; and

transmitting, from the engine controller, an activation signal to the plurality of thermal elements, the activation signal based on the generated active pulse or the generated inactive pulse for each of the row of energy index values.

70. (new) A method of transmitting pulse information to a plurality of thermal elements, comprising:

receiving, at host controller that controls a print engine, a row of energy index values;

storing, in a frame buffer in the host controller, the row of energy index values, each of the energy index values being stored in an active subregister;

comparing, by comparison logic in the host controller, the energy index values in each of the active subregisters to an activating energy level for a first bit position in a pulse activation table, the pulse activation table including a plurality of entries where each of the plurality of entries corresponds to a bit position in a pulse stream;

generating an active pulse for a duration of a pulse time for each of the row of energy index values that is greater than or equal to the activating energy level of the first pulse position in the pulse stream;

generating an inactive pulse for a duration of a pulse time for each of the row of

energy index values that is less than the activating energy level of the first pulse position in the pulse stream; and

transmitting, at a host controller, an activation signal to the plurality of thermal elements, the activation signal based on the generated active pulse or the generated inactive pulse for each of the row of energy index values.